

Ultrathin tabular grain emulsions with sensitization enhancements

Patent Number: ☐ EP0699945, B1

Publication date: 1996-03-06

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Requested Patent: ☒ JP8101476

Application Number: EP19950420234 19950821

Priority Number (s): US19940297195 19940826; US19940296562 19940826; US19940297430 19940826; US19940359251 19941219

IPC Classification: G03C1/005

EC Classification: G03C1/005T

Equivalents: DE69520181D, DE69520181T, ☐ EP0699947, ☐ EP0699951, ☐ EP0701164, ☐ JP8069069, ☒ JP8101474, ☒ JP8101475, ☐ US5494789

Abstract

A chemically and spectrally sensitized ultra-thin tabular grain emulsion is disclosed including tabular grains (a) having $\approx 111\bar{1}0$ major faces, (b) containing greater than 70 mole percent bromide and at least 0.25 mole percent iodide, based on silver, (c) accounting for greater than 90 percent of total grain projected area, (d) exhibiting an average equivalent circular diameter of at least 0.7 μm , and (e) exhibiting an average thickness of less than 0.07 μm . It has been observed that increased speed and contrast as well as improvements in speed-granularity relationships can be realized when during the chemical sensitization silver and halide ions including iodide and chloride ions are added to the ultrathin tabular grain host emulsion to deposit epitaxially on up to 50 percent of the surface area of the tabular grains silver halide protrusions (a) having an isomorphic face centered cubic crystal lattice structure, (b) containing at least a 10 mole percent higher chloride ion concentration than the tabular grains, and (c) containing an iodide concentration that is increased by the iodide ion addition.

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